



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,871	03/30/2004	Paul Garfield Jong	11443-6	2775
1059	7590	03/13/2006	EXAMINER	
BERESKIN AND PARR 40 KING STREET WEST BOX 401 TORONTO, ON M5H 3Y2 CANADA			RADI, JOHN A	
			ART UNIT	PAPER NUMBER
			3641	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/811,871	<b>Applicant(s)</b> JONG, PAUL GARFIELD	
	<b>Examiner</b> John A. Radi	<b>Art Unit</b> 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 1-11, 17, 20 and 26-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-16, 18, 19, 21-25 and 33-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-39 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/14/04, 1/27/05, 9/27/05</u> | 6) <input type="checkbox"/> Other: _____  |

3/10/05

**DETAILED ACTION**

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-11, 29-32, are drawn to a paintball gun assembly, classified in class 124, subclass 61.
- II. Claims 12-25 and 33-39, are drawn to a paintball gun air control assembly, classified in class 124, subclass 73.
- III. Claims 26-28, are drawn to a paintball gun air storage chamber assembly, classified in class 141, subclass 37.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because invention I is drawn to a pneumatic air gun in which the trigger is connected to the air manifold by way of an electric/solenoid connection. The subcombination has separate utility such as airflow manifold for a pneumatic tool.

Inventions I and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2)

Art Unit: 3641

that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because invention I can be practiced with any type of air storage chamber including a simple pneumatic cylinder. The subcombination has separate utility such as a variable pressure air storage cylinder for use in pneumatic tools.

Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as an air storage cylinder for use in pneumatic tools. See MPEP § 806.05(d).

This application contains claims directed to the following patentably distinct species of the claimed invention:

If electing invention I above, must select one species from Group I:

Group I – operation of the inlet control device

A. powered by the low pressure regulator

B. powered by the high pressure regulator

If electing invention II above, must select one species from Group II and one from Group III:

Group II – Housing Sealing Surface

C. is generally frusto-conical

D. is generally toroidal

Group III – Spool Sealing Surface

E. is generally frusto-conical

F. is generally toroidal

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Mr. Millman on November 16, 2005 a provisional election was made without traverse to prosecute Invention II directed to claims 12-25, and 33-39, with regard to the paintball gun air manifold assembly. Furthermore, election was made towards species C and E wherein the housing and spool sealing surfaces are directed towards a frusto-conical shape, as shown in Figure 15d, or 17d. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-11, 17, 20, and 26-32 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-15, 21-25, and 33-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lukas (US5613483), and further in view of Fagerlie et al. (US 6192937).

Lukas discloses: A paintball marker (12) having a trigger (18) and a flow control valve (30), wherein the trigger is operatively connected to the flow control valve (col. 3, lines 8-10), the flow control valve (30) including a housing defining an interior, the housing having a first (100), a second (102), a third (98), a fourth (62) and a fifth port (68), wherein the ports are longitudinally spaced apart, wherein the housing further includes a first, a second, a third and a fourth housing projection extending into the

Art Unit: 3641

interior longitudinally between the first and second ports (the four flat surface defining the area between ports 100 and 102), the second and third ports, the third and fourth ports and the fourth and fifth ports respectively, the housing projections having a first, a second, a third and a fourth housing sealing surface thereon respectively (the flat surfaces defining the walls of the valve between ports 100 and 102), the flow control valve further including an elongate valve spool (71) that is slidably mounted in the housing, wherein the valve spool is engageable by the trigger by a mechanical (col. 3, lines 8-10) connection for movement to at least one of the first and second positions.

With respect to claim 13, 21 and 34, Lukas teaches the trigger directly engaging the valve spool as can be seen in figure 1.

With respect to claim 22, 23 and 37, Lukas teaches the spool valve operatively connected to an inlet control device because the spool valve directs the movement of firing bolt 36 which moves back and forth across inlet chamber 24 to allow the paintballs to enter the barrel.

With respect to claim 24, 25, 36, 38 and 39, regarding a second flow control valve for firing, Lukas teaches a separate control valve (regulator 28) which directs a controlled volume of gas to actually expel the paintball from the barrel (col. 4, lines 49-67).

Lukas does not teach the use of 4 sealing surfaces on the spool valve, instead teaching the use of 3 sealing surfaces to accomplish the same function. Fagerlie is one of several Pilot Operated Pneumatic Valves, which shows the use of 4 sealing surfaces on the spool valve to manipulate the flow of air through the air manifold as desired.

Art Unit: 3641

Fagerlie teaches that the use of these type of air manifolds is well known in the art, but that the sealing surfaces and inlet/outlet ports as taught by Fagerlie are capable of being made at a smaller scale and to operate faster than Pilot Pneumatic Valves of the past. It would have been obvious to one skilled in the art at the time of invention to substitute the spindle valve as taught by Fagerlie with that taught by Lukas to achieve a smaller and faster air operated valve.

Claims 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lukas (US5613483) in view of Fagerlie (US 6192937) as applied to claims 12 and 15 above, and further in view of Tomlin (US 5409040).

The Lukas / Fagerlie teaches the invention as described above with regard to claims 12 and 15, but does not teach the use of a frusto-conical sealing surfaces in the spool valve. Tomlin teaches the use of frusto-conical sealing surfaces for use in pneumatic spool valves to achieve a tight seal with minimum pressure by increasing the surface area between sealing surfaces. The use of frusto-conical sealing surfaces is well known in the art of valve design and it would have been obvious to one skilled in the art at the time of invention to optimize the air manifold as taught by Lukas / Fagerlie to include frusto-conical sealing surfaces to achieve a more efficient sealing surface.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached form PTO-892 for more prior art regarding pilot operated pneumatic valves, and paintball guns using such.



Art Unit: 3641

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Radi whose telephone number is 571-272-5883. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'John A. Radi', with a stylized flourish at the end.

John A. Radi  
Patent Examiner  
Art Unit 3641